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Illustrated Wood-Worker.

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All correspondence intended for the columns of the WOOD-WORKER should be sent to the Editor; but letters of a business nature, or which contain money or Post-Office orders, should be addressed to the Publisher. Rejected communications will not be returned unless the persons sending them remit return postage.

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ILLUSTRATIONS.

Plate 17, Design for Bookcase; Plate 18, Hand-Railing; Plate 19, Elevation and Plan of Sideboard; Plate 20, Library Tables; Plate 21, Design for Easel; Plate 22, Practical Carpentry; Plate 23, Hip Roofs, etc.; Plate 24, Handsome Design for Wardrobe.

Our Illustrations.

THE bookcase shown on our front page was designed by S. S. Beman, architect, of No. 11, Pine Street, New York, for a gentleman in Elizabeth, N. J., and has been much admired by many who have seen the work since it was built. It is made of ash, with plate glass in the doors, and nickel-plated furniture. It would look equally well if constructed in chestnut or oak. The construction is such that any intelligent mechanic can make one similar.

Plate 18 is illustrative of the articles on the "Sectorian System of Hand-railing."

On plate 19 is shown a very handsome design of a sideboard, which is intended to be built of black walnut, with the upper part entirely inclosed with glass doors. The hinge-plates and drawer-pulls should be of polished brass.

The library table shown on plate 20, Figs. 1 and 2, has a wide shelf, as seen on the elevation. It has a drawer on each end, the side of one of them runs in by the side of the other, allowing the drawers to be opened their entire lengths. The reading table is arranged for books of reference, such as encyclopædias, etc., with a shallow drawer for writing materials in the front, and a portfolio in the back for large books or engravings. The top is inclined, for easier reference to the "Webster's Unabridged," which is shown upon the top. The table has casters for convenient moving. The metal trimmings are all polished brass.

Plate 21 shows a very pretty design for an easel. If built of cherry, and ebonized as shown, and properly trimmed with hinge-plates of polished brass, it will have a very chaste and handsome appearance.

Plates 22 and 23 are fully explained on page of the present number.

Plate 24 is a wardrobe, designed by Mr. Fieder, in answer to a request made by one of our correspondents. The design is an excellent one, combining, as it does, the Eastlake and Queen Anne styles, the construction being Eastlake's, and the ornamentation being Queen Anne's. It is so constructed that it can be taken apart with ease, the cross shelves having double tenons, which go through the sides and keyed as shown. The cornice is housed into the stiles, and the pressure of the keys keeps it in place. The two upper panels in the doors are ornamented with emblems of night and morning, the work being done with a roughing tool. It is designed to be executed in any kind of light domestic wood.

The Outlook.

THE WOOD-WORKER may now be considered a success, so far as quality is concerned; every one speaks well of it: architects, artists, cabinet-makers, designers, and carpenters, all alike are loud in its praises. We cannot be otherwise than pleased with this almost universal recognition of our efforts to supply something that the wood-workers of this country really want, at a price within the reach of all.

This month our illustrations are as excellent as they are varied, and all the designs shown are original, which adds greatly to their value. Plates 19, 20, and 21 were designed by Mr. Frank Angel, of Providence, R. I., and are evidently from a master-hand. The front-page design is from Mr. S. S. Beman, whom many of our readers will recognize as an old acquaintance. The wardrobe on plate 24 is the work of Mr. Fieder, who promises some good things for the April number. We are also promised, for our next number, the front and side elevations and plans and details of a very handsome altar that was designed by Mr. Arthur Crooks, architect, and

which was executed for St. Peter's Church, Rosendale. In fact, good as our previous issues have been, we feel safe in saying that our April issue will be much better.

It is quite evident that times are improving, and as soon as the weather gets better there will be a more active demand for workers in wood than there has been for some years. The severity of the winter has compelled carpenters and joiners to remain idle a greater length of time this season than last, and the present extremely dull period with these trades is due more to the inclemency of the weather than to the scarcity of work. The increased purchasing power of money, bonds, etc., has induced thousands of persons of small property throughout the country towns to build new houses. In the West especially some country villages have doubled their house accommodation during the past five years.

The cabinet-maker will find his business improve along with that of the carpenter, for new houses will require new furnishings, and thus the ball is kept rolling.

Owing, no doubt, to the fact that many thousand miles of road-bed have been improved and steel rails laid within the last few years, less new cars have been required, as the improvements have tended to preserve the rolling stock from wear much longer than formerly, and thus the trade is kept dull. There are visible signs of improvement, however, and we trust that before midsummer the trade will revive to something like its former activity.

Practical Carpentry.

THE usual definition of an ellipse is, that it is "a figure bounded by a regular curve, generated from two foci." This definition is best explained by the use of string and pencil. In Fig. 1, Plate 22, draw the line A B, representing the length of the figure, and at right angles to it draw the line C D, representing its width. Take the distance A E, or one half of the length, and with C as a centre strike the arc F H G. The points at which this arc cuts the major axis, or, in other words, F and G, will be the foci. Drive a pin in each, and also a third one in C. Around these three pins tie a string. Remove the third pin and substitute a pencil. By moving the pencil around the two foci, keeping the string stretched all the time, a regular curve will be produced, which is an ellipse.

Fig. 2 shows a method of drawing an ellipse with a trammel. L M is the major or largest diameter, and P T the minor or short diameter; place the trammel with its centre over the intersection of the two diameters as shown; make the distance on the rod, from the pencil R to the pin F, equal to P S, and from R to the pin C equal to S L; now, let the pins C F move through the grooves, and the pencil will then mark the outline of the ellipse.

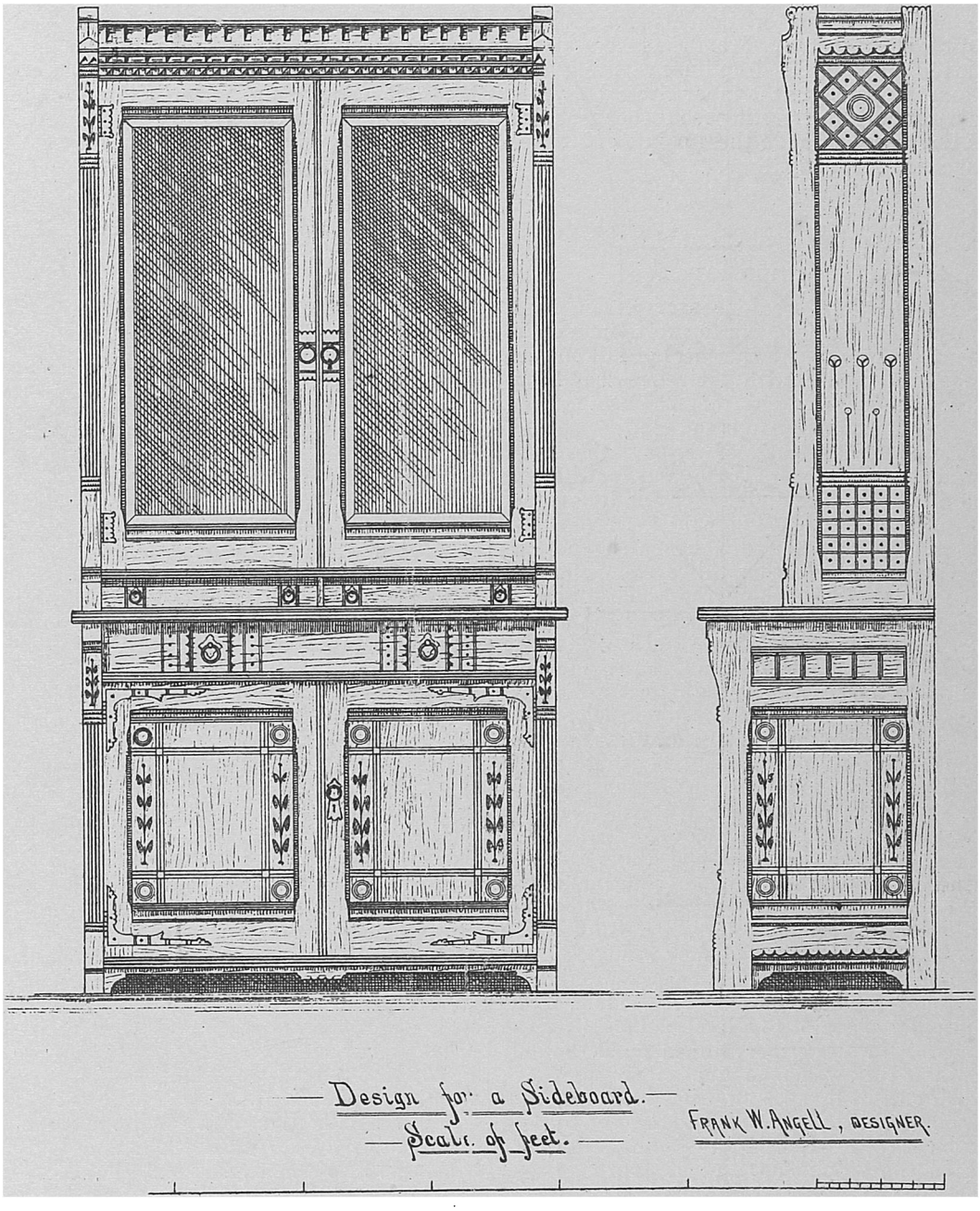
The ellipse may also be projected as follows: Take a rod or strip of paper, as shown in Fig. 3, lay out the diameters A B and C D, and mark on the rod or paper O K, equal to L D; also O N, equal to L B. Now move the strip directly on the end adjoining the edge upon which you marked K N. The curve can then be traced through the points so found.

On Fig. 4 is shown a method of finding the exact shape of newel cap on any required mitre with a given form of hand-rail. Suppose S to be the given form of hand-rail; O F N the plan of mitre; T L the diameter of newel cap. Draw the line K G at right angles to T L, from E to N, parallel to G F; draw as many ordinates as may be deemed sufficient, cutting the mitre line F N; with J as centre, and J F as radius, draw F R, then 2, 3, etc. Take E G, and place it at J K and R 6; place 1 5 at 3 8, etc. The line traced through these points at H shows the form of the required newel cap. Should the mitre, extending from edge of cap, equal half the width of the rail, the shape of the cap may be exactly like that of the hand-rail.

The direction of any joint in any ellipse may be found as follows: Find the focii O O, Fig. 5, as explained in Fig. 1. Let V be the point at which the joint is required; draw from O O through V, O S, and O R; mark V S and V R equal. With any distance greater than one half between R and S, with R and S as centres, mark the arcs intersecting at T; draw the line T F, and this will be the point sought. So by biseting the angle S V O, we should find a tangent to the ellipse at the point V. This is a very useful problem, and should be studied until it is thoroughly understood by the student, as it will be found of great value in learning the art of stair-building.

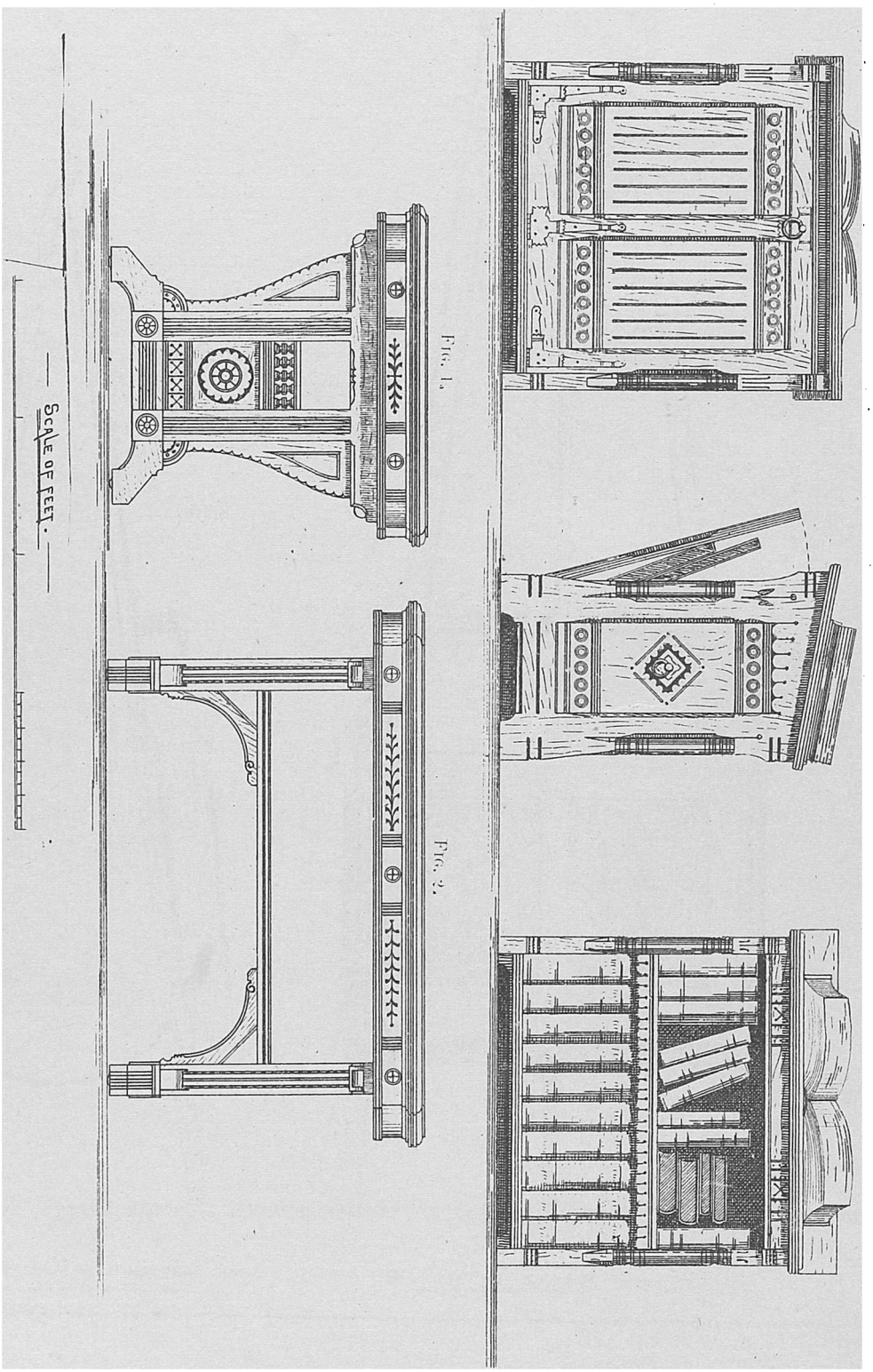
A method of producing an approximate ellipse, and one in quite common use among builders, by reason of its convenience for large figures, is shown in Fig. 6. Lay off the length of the required figure, as shown by A B, and the width as shown by C D. Construct a parallelogram that shall have its sides tangent to the figure at the points of its length and width, all as shown by E F G H. Subdivide one half of the end of the parallelogram into any convenient number of equal parts, as shown by A E, and one half of its side in the same manner, as shown by E D. Connect these two sets of points by intersecting lines in the manner shown in the engraving. Repeat the operation for each of the other corners of the parallelogram. A line traced through the inner set of intersections will be a very close approximation to an ellipse.

PLATE 19.



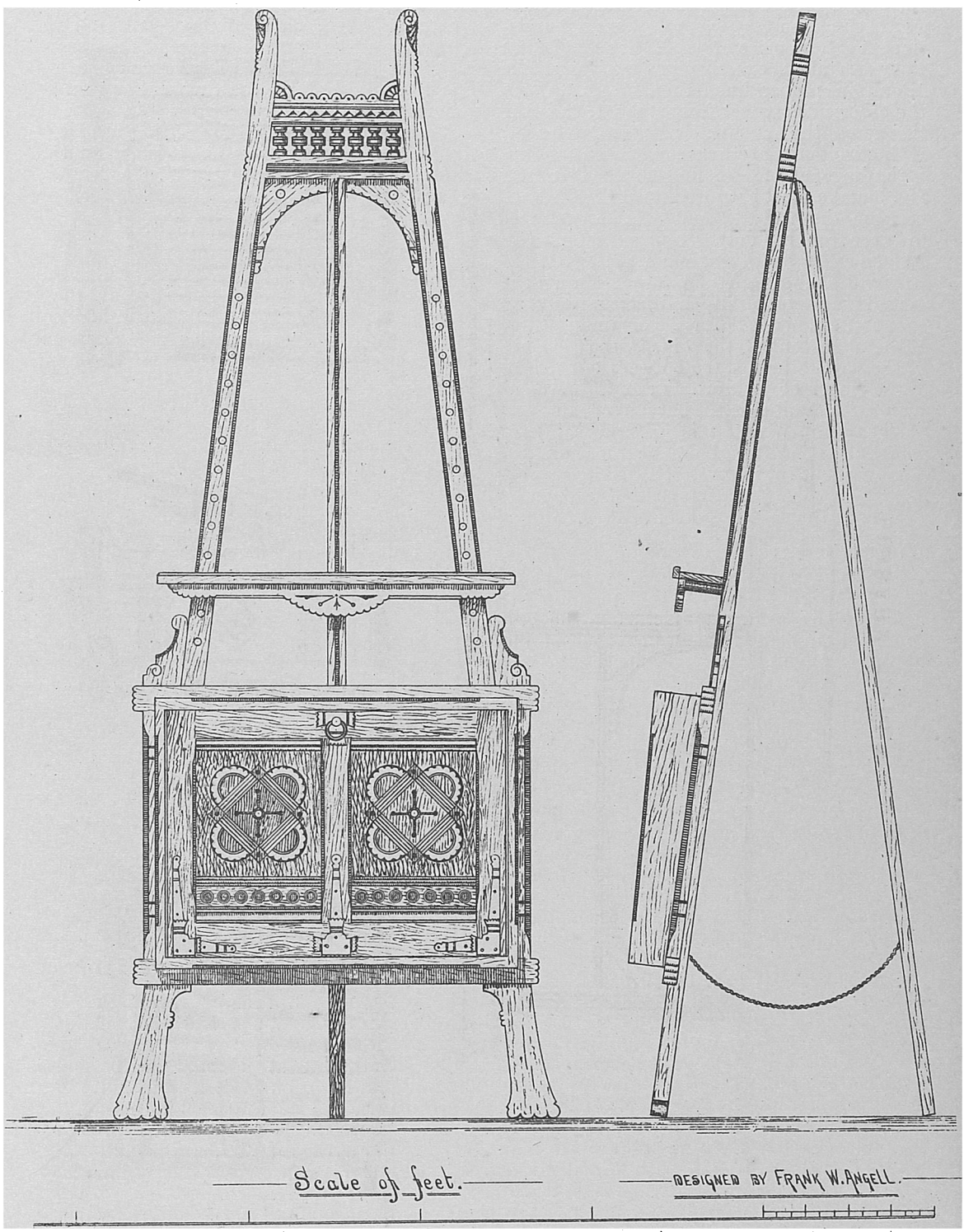
SIDE-BOARD.

PLATE 20.



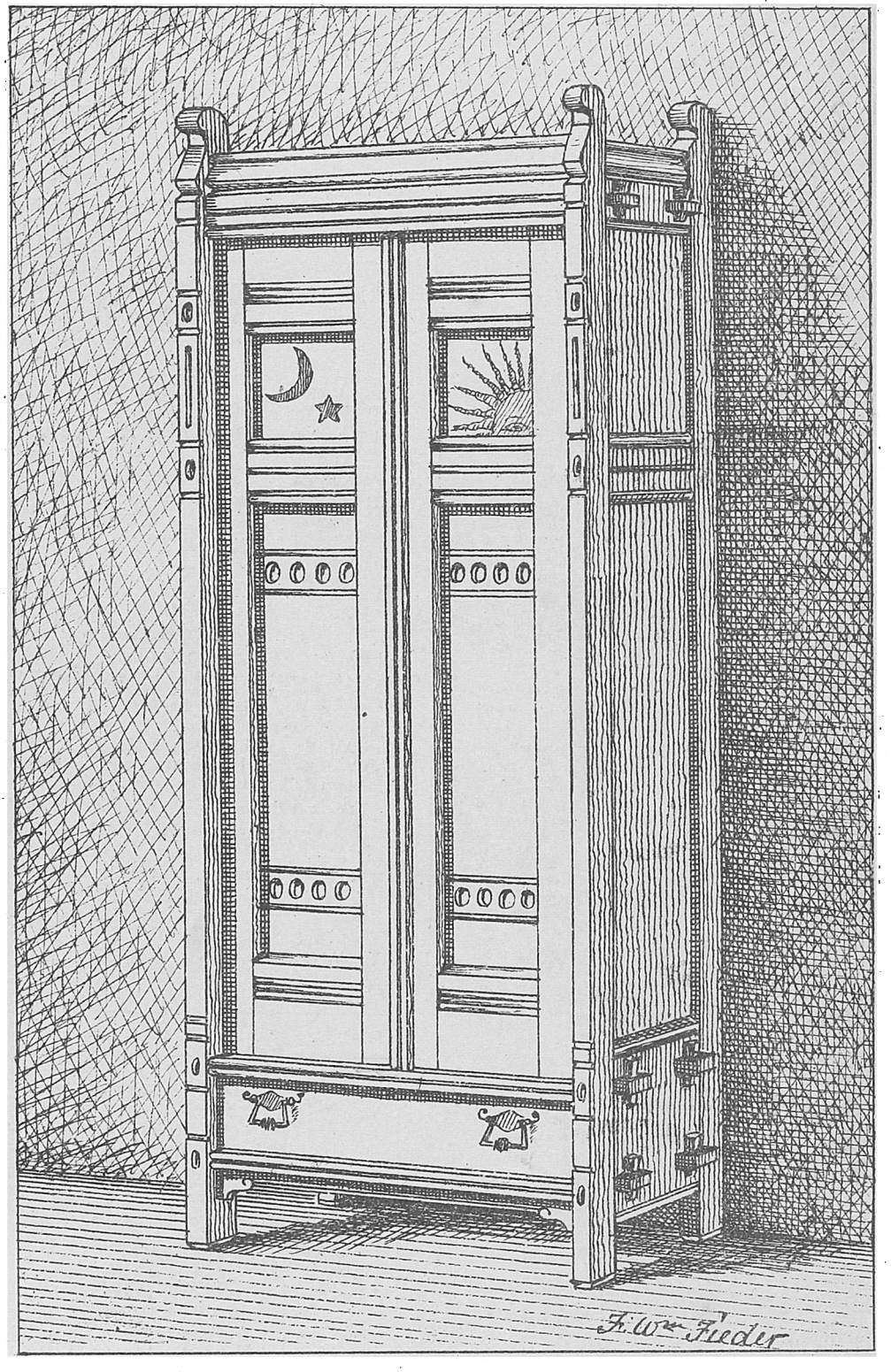
LIBRARY TABLE.

PLATE 21.



EASEL.

PLATE 24



WARD-ROBE.